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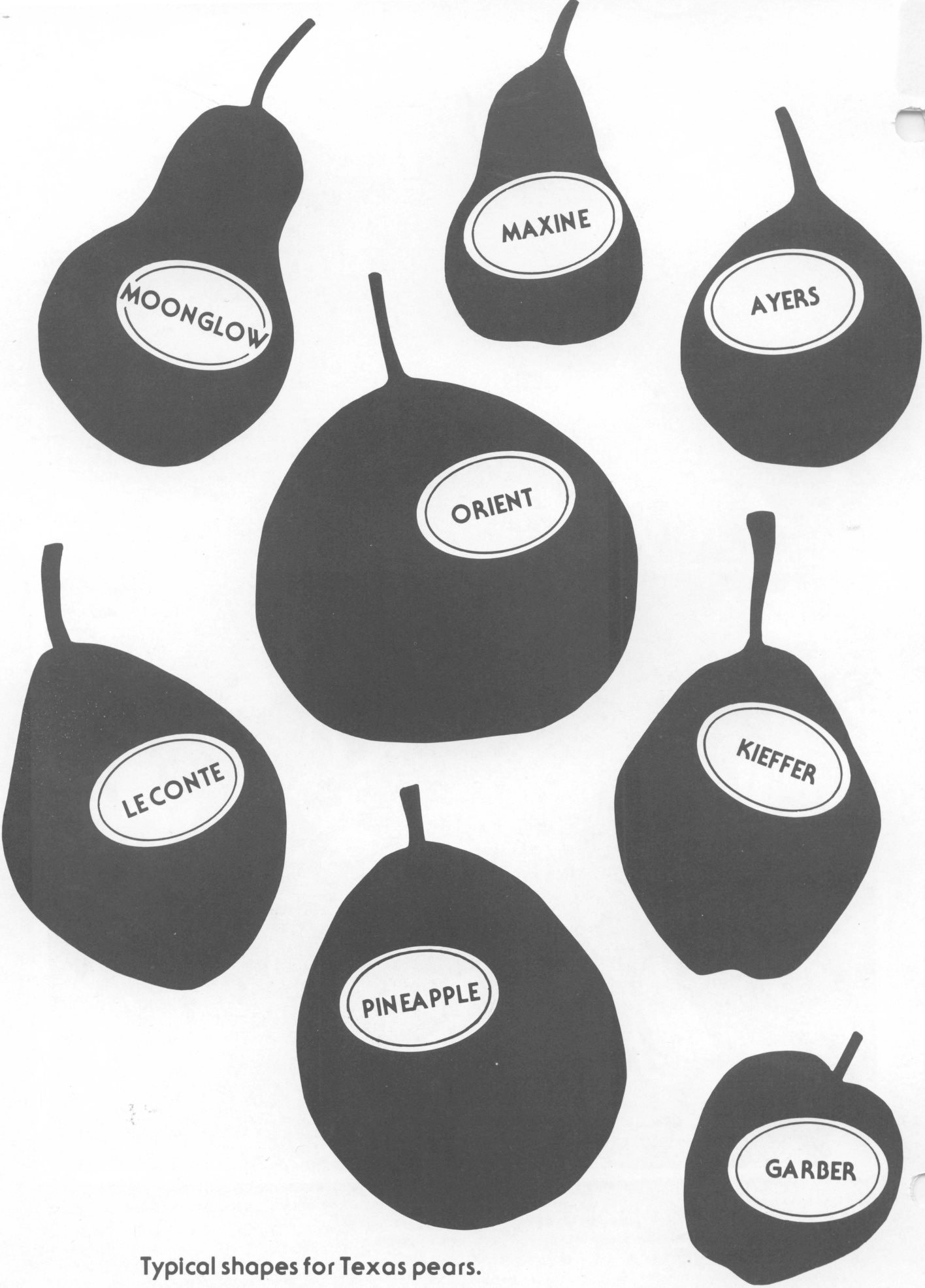
Texas Pears

TEXAS AGRICULTURAL EXTENSION SERVICE, THE TEXAS A&M UNIVERSITY SYSTEM, Daniel C. Pfannstiel, Director, College Station, Texas



Typical shapes for Texas pears.

TEXAS PEARS

George Ray McEachern and Bluefford G. Hancock*

Pears are excellent home garden fruit trees. Selected varieties produce good fruit with few management problems. Pears were popular during the early years of the Texas Republic, and old trees can still be found across the state as landmarks of old homeplaces. Pears make strong trees and display attractive white blossoms every spring. Few fruit are better adapted to home processing than pears. Pear preserves, pickled pears, pear slices and pear jam are possibilities.

Very few commercial pears are produced in Texas. Several peach growers produce pears for special, home-processing buyers at farmers' markets in large cities.

TYPES OF PEARS

Two important types of pears are grown in the United States — the common pear and oriental hybrid pears.

The common, European or French pear, *Pyrus communis,* is the commercial type grown in the Pacific northwest and in Europe. It has outstanding fresh fruit quality when grown under very specific environmental conditions. Unfortunately, these pears cannot be grown in Texas because of susceptibility to fire blight.

Oriental hybrid varieties are the result of cross pollination between the common pear and the oriental sand pear, *Pyrus serotina.* These varieties usually have relatively large leaves, flowers which appear before the leaves and russeted fruit with long stems. These hybrids have been important to Texas pear culture because of their ability to withstand heat and drought. Many oriental hybrids have a fairly low winter chilling requirement of accumulated temperature below 45° F. They fruit and flower successfully in Texas. More important, many of the oriental hybrid varieties have some degree of fire blight resistance or tolerance.

NEWER VARIETIES

Ayers was developed by Brooks D. Drain of Tennessee Agricultural Experiment Station as a Garber x Anjou hybrid in 1937 and introduced in 1954. It ripens early in the season. The fruit flesh is juicy, sweet and can be used fresh or for canning. The fruit is small and yellow with an attractive red blush. Fruit flesh is low in grit cells. Ayers is self-sterile, requiring a pollinator.

Orient was developed as a Frechick x oriental hybrid cross by Walter Van Fleet of Chico, California, before 1925 and introduced by Tennessee Agricultural Experiment Station and USDA in 1945. The tree

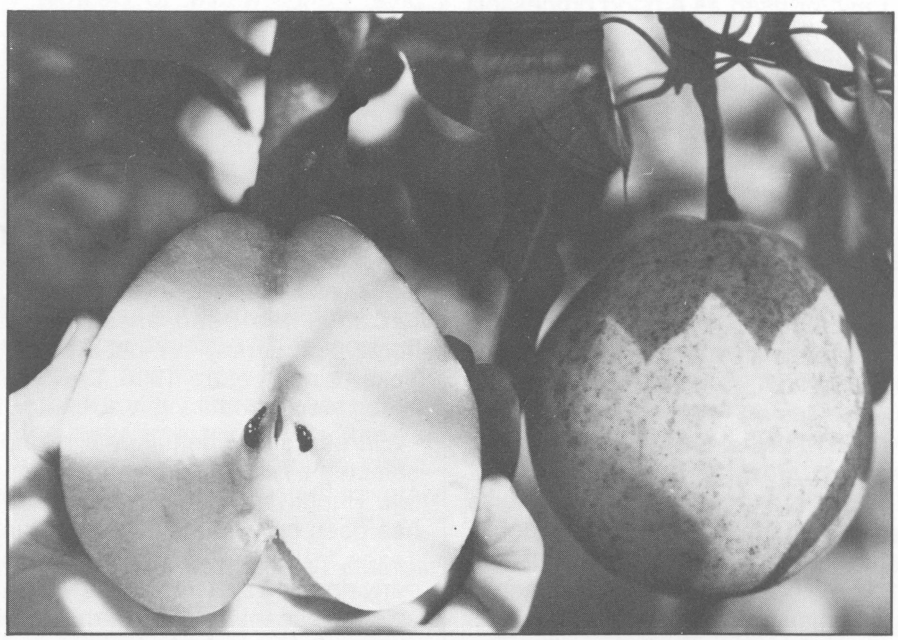


Figure 1. Orient is the best pear variety for Texas because of its outstanding fruit and resistance to fire blight.

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has an excellent shape which is easy to train. Mature trees are regular bearers that retain leaves well into the fall. The fruit is large, relatively hard and has a russet skin when mature. The fruit flesh is beautifully white, firm, juicy and slightly sweet. Orient has a low chilling requirement, making it particularly adapted to South Texas; however, it grows equally well in far North Texas. Orient, which is self-sterile and requires a pollinator, is becoming the most popular homegrown pear in Texas.

Moonglow was developed and released by the USDA at Beltsville, Maryland, in 1960. The tree is vigorous, upright and bears at an early age. The fruit is large and attractive with juicy sub-acid flesh which has very few grit cells. Moonglow, which ripens early in the season, is good for eating fresh and processing. The skin is bitter but not objectionable. Moonglow is an excellent pollinator variety.

Maxine was propagated by E. M. Bulchley of Greenville, Ohio, about 1900 from an old tree in Preble County, Ohio. It's origin is unknown. The flesh is moderately firm and contains a low number of grit cells. The fruit is a mid-season variety with excellent quality. It can be eaten fresh or used as a good processor. The tree is vigorous and productive. This variety has been listed as synonymous with Starkings Delicious.

Ayers, Moonglow and Maxine should be grown in North Texas only.

OLDER VARIETIES

Kieffer was selected by Peter Kieffer of Roxbourough, Pennsylvania, as an oriental pear hybrid in 1863. It has since become the most widely grown pear in the south. It was a very popular variety in Texas in 1890. The fruit ripens early and is hard, coarse, contains moderate grit cells and lacks the characteristic pear flavor. When properly ripened, it develops good eating quality. The Kieffer is a good processing pear, suitable for canning and pickling; however, it is less suited for preserves. Kieffer trees are vigorous, very productive, heat tolerant and fire blight tolerant. Limbs of Kieffer can become infested with fire blight with the tree continuing to produce fruit and sustain long life. Kieffer is self-sterile, requiring a pollinator.

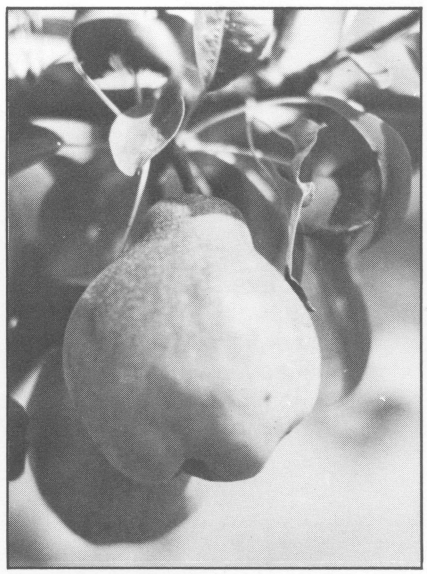

Figure 2. Moonglow is a high quality pear which can be grown in North Texas.

LeConte is probably an oriental pear hybrid which was supposed to have been carried from Philadelphia, Pennsylvania, to Georgia in about 1850 by a Major LeConte. It has been grown without commercial success in Texas because of fire blight. A high percentage of the trees were killed by fire blight in a single season. The fruit has good quality and can be eaten fresh. It has a typical pear shape and relatively low grit cell content. It makes excellent preserves and pickled pears. LeConte has been an excellent home pear variety in most areas of Texas since before 1890. LeConte is self-sterile, requiring a pollinator.

Garber is an oriental pear hybrid selected by J. B. Garber of Columbia, Pennsylvania, before 1880. It has been grown as a home pear in Texas for many years. The fruit is early ripening and has a pale yellow color, pleasant odor and an apple shape. It has a fairly low grit cell content and is an excellent processing variety. The tree is relatively resistant to fire blight but has a tendency to lose its leaves early in the fall. Garber is the female parent of the new Ayers variety.

Pineapple is an oriental hybrid commonly grown across the south. The fruit ripens early and is very hard, even when fully ripe. It makes excellent preserves, but is poor as a canning and sliced fruit because it disintegrates when cooked. Pineapple has a high grit cell content. The tree is vigorous and has a history of long life.

ROOTSTOCK

Pyrus calleryana is the best rootstock for Texas pears. It is adapted to a wide range of conditions and has a high degree of resistance to fire blight. French or oriental varieties can be grafted successfully onto it. Most of the *Pyrus calleryana* rootstocks used in the U.S. are grown at White Rock Nursery in Crockett, Texas.

Many homeowners purchase a tree as a grafted variety and later learn that they only have the *Pyrus calleryana* rootstock. *Pyrus calleryana* fruit are produced in clusters of 4 to 10 very small pears, with the largest fruit less than 1 inch in diameter.

Pyrus calleryana trees, which have not been grafted, make beautiful trees with attractive blossoms in the spring. Several outstanding seedlings have been propagated as ornamental varieties such as Bradford and Aristocrat.

POLLINATION

Many pear varieties recommended for Texas require cross pollination and all benefit from it. The honey bee is primarily responsible for cross pollination so take care to protect this insect during the bloom period.

Pollination is a special concern of pear growers because many of the most common varieties are self-

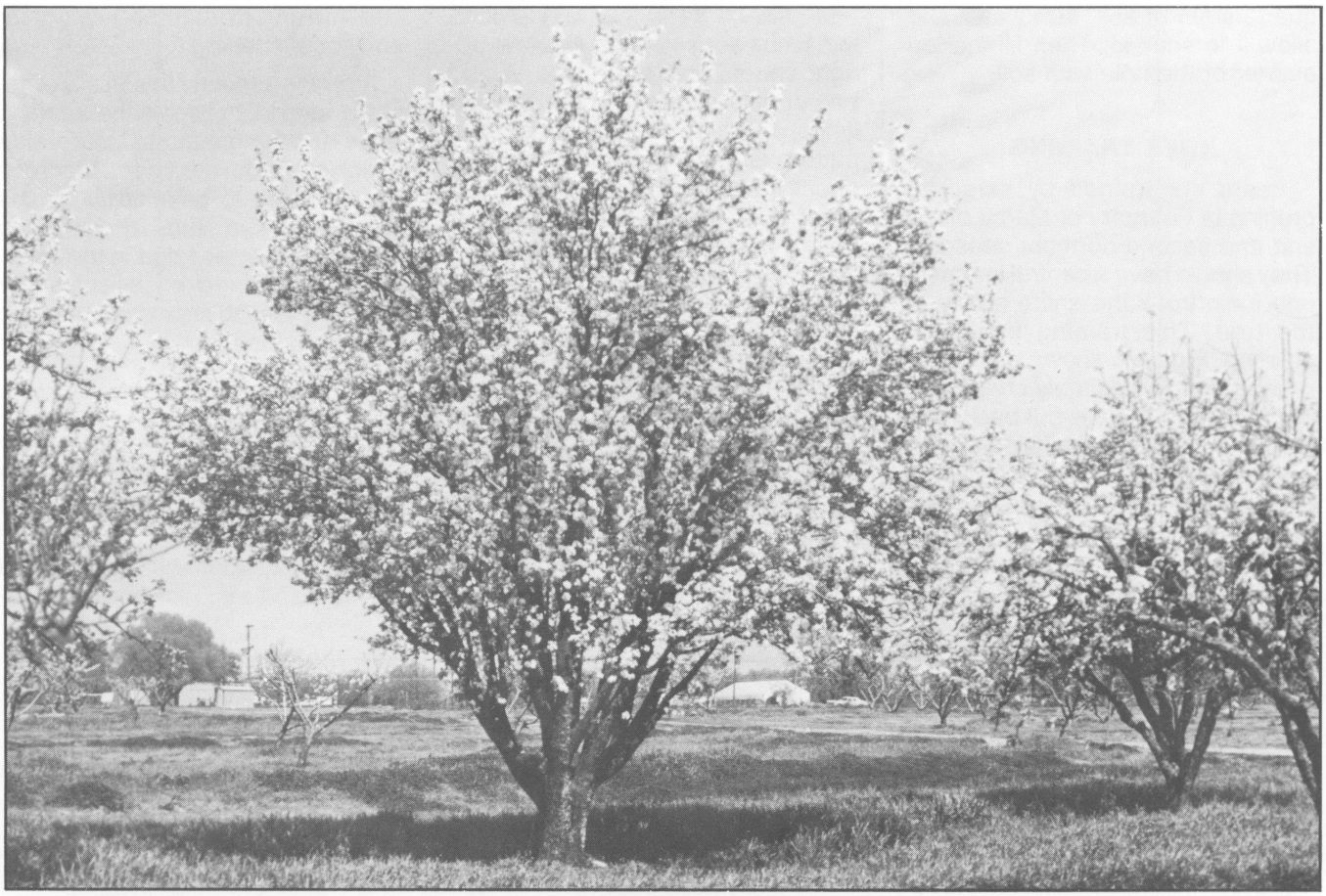

Figure 3. Beautiful white blooms make pears a valuable ornamental as well as fruit producer.

sterile. Kieffer, Orient, Ayers, LeConte and Garber are completely or partly self-sterile. A variety may be self-sterile in one location and self-sterile or partially so in others. A 50-acre Kieffer orchard in Polk County, Texas, produced a heavy crop in 1976 with no other variety in the orchard as a pollinator. Climate, soil, bees, weather at blooming time and general tree health and vigor play a large part in self-sterility.

Self fruitful varieties are benefited by cross-pollination. Plant two or more varieties to encourage cross pollination. Moonglow is a good pollinator.

SITE SELECTION

Pears, particularly the oriental-type standard varieties, can be grown in any area of Texas. They make excellent yard trees as indicated by old homestead trees all across the state.

Most pear trees are relatively deep rooted and grow best in soils which do not restrict downward growth. Hybrid pears prefer sandy soils over clay or heavy loams but can be grown for home trees in most Texas soils. Although pears can stand a wetter soil than most orchard trees, plant them in a well drained area if possible.

Good air drainage helps prevent damage from frost and disease. Plant in an area with a slight slope to insure air drainage. If the location is subject to strong winds, as is the case in many parts of Texas, shelter the pear tree with other trees or buildings. Branches heavily loaded with fruit can be damaged severely by whipping winds.

Pears perform best on naturally fertile soil. Adding commercial fertilizer to an infertile soil often stimulates excessive vegetative growth susceptible to fire blight.

PLANTING

It is important to establish pears with healthy, vigorous disease-free stock of known, recommended varieties. It is best to select those with a diameter of ½ to ¾ of an inch or 36 to 48 inches tall. The trees arrive bare-rooted for dormant season planting. Inspect for damage or diseases and plant as soon as possible. Keep the roots moist but not wet until planting.

Space pears approximately 24 feet apart. Dig the planting hole large enough to accommodate the roots without cramping. Prune damaged roots when planting. Maintain the crown of the tree at the same level as it was in the nursery row.

Do not put commercial granular fertilizers in the hole at the time of planting; this causes salt burn.

Pack the soil around the roots as it is added to the hole to prevent air pockets. When the hole is three

quarters full of soil, add water and allow it to soak in. Then fill the top quarter of the hole with soil.

TREE TRAINING

Pears are trained by selective pruning in February or March of the first and second dormant seasons. They should have a central leader of one main trunk the entire height of the tree. This training begins at planting. Figure 4 shows a properly pruned tree immediately after planting. The main whip is cut back one-third to one-half and all side shoots are thinned out.

At the end of the first growing season the central leader is again selected as the strongest upright shoot and cut back one-third to one-half. Three or four lateral scaffold limbs are selected. All other upright shoots and side limbs should be cut out. In selecting the scaffold limbs, a symmetrical spiral staircase pattern is ideal. No limb should be directly above another. Figures 5 and 6 illustrate 1-year-old pear trees before and after dormant pruning.

After the second growing season the same type of pruning is needed. First, select a strong upright shoot for the central leader and cut it back one-third to one-half. Thin out all other upright shoots. Then, select three to five lateral scaffold limbs on the central leader. Tip-prune the spiral pattern of lateral scaffold limbs to induce lateral shoots. More tipping is also encouraged to stimulate maximum side-branching for additional shading.

After the second season's growth, place strings between the scaffold limbs and the ground to insure wide crotch angle development. Vigorous shoots begin to develop along the spread scaffold limbs. Pinch-prune these at least twice during the growing season. Remove 1 inch of tender growth when the shoots are only 6 to 12 inches long.

PRUNING

Prune out fire blight infested shoots or limbs regardless of the season.

After scaffold limbs are selected the first and second dormant sea-

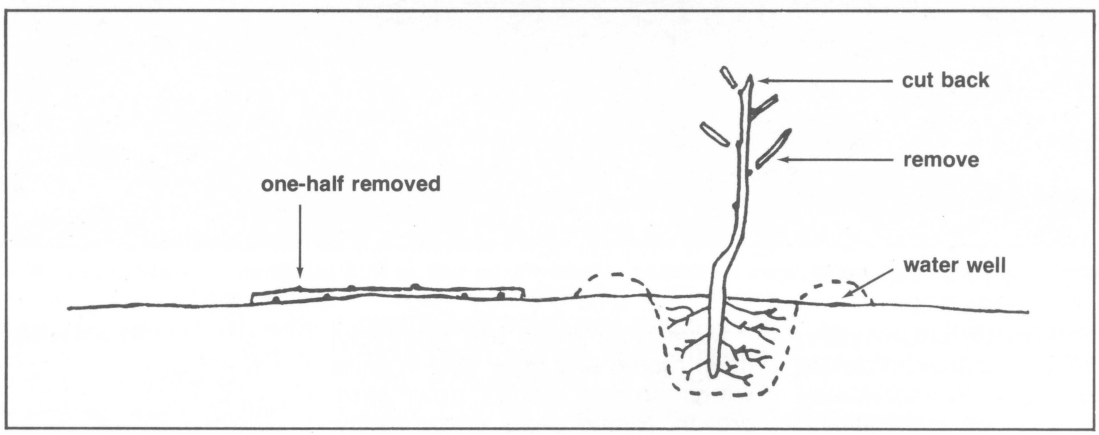

Figure 4. Proper pruning technique for a pear tree at planting time.

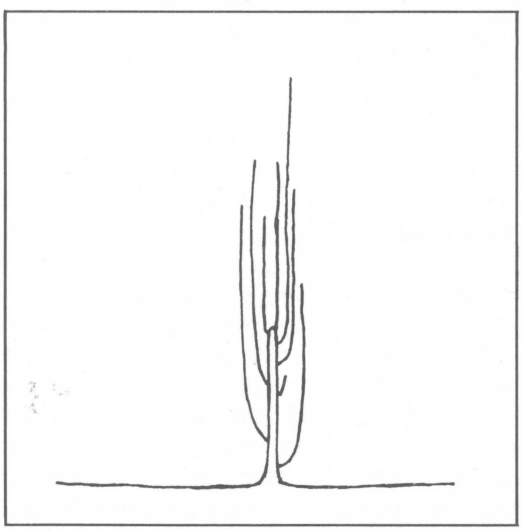

Figure 5. A 1-year-old pear tree *before* dormant pruning.

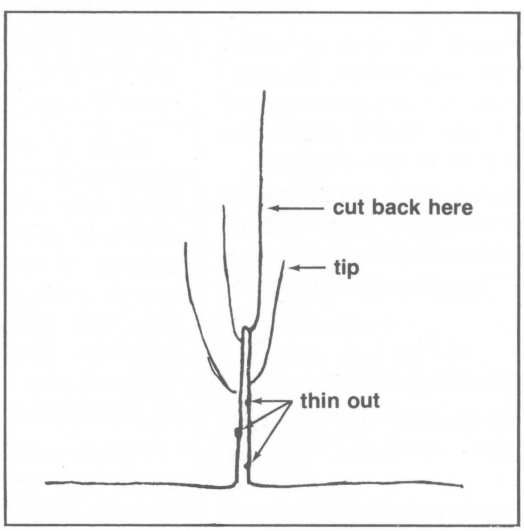

Figure 6. A 1-year-old pear tree *after* dormant pruning.

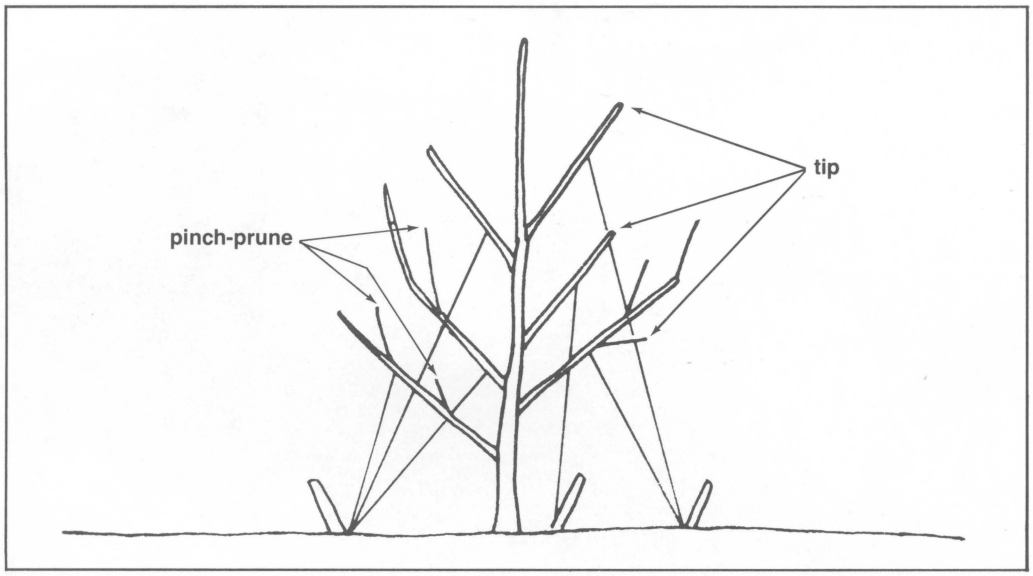

Figure 7. A 2-year-old tree properly trained with strings on scaffold limbs in the dormant season.

son, do not prune the tree until annual terminal growth is less than 6 inches. Once growth has stopped, the tree frequently will begin alternate bearing, having a large crop one year and no crop the following. Use pruning to stimulate new growth. Thin out undesirable suckers and water sprouts. Moderate cutting back of several 3- and 2-year-old shoots may be needed to stimulate new growth.

Never dehorn or severely prune a pear tree. This stimulates too much growth.

Cut out fire blight cankers during the pruning operation.

FERTILIZING

Texas pear trees must be maintained in a low vigor state to reduce the possibility of fire blight. Use of nitrogenous fertilizers and pruning stimulates succulent vegetative growth susceptible to fire blight. If the soil is sufficiently fertile for a mature tree to put out 6 to 12 inches of new terminal growth annually, do not add fertilizer. As previously mentioned, do not add granular fertilizer to the soil around newly planted trees.

When mature trees make no growth, use commercial fertilizers.

Figure 8. Young pear tree limbs should be pulled down to prevent extremely upright growth.

Apply with extreme caution and only in amounts required to obtain 6 inches of growth. Do not use manure or organic fertilizers. They stimulate succulent, late season growth which is susceptible to fire blight.

HARVESTING

Harvest Texas pears when they are two-thirds their mature size up until they reach full size. Fruit remaining on the tree until very late in the season ripen poorly and have poorer texture and flavor. Harvest pears when maximum yield can be obtained and fruit size will not increase. At this stage the green gradually fades and fruit becomes slightly more yellow. This usually occurs in late August and September in Texas.

RIPENING

The quality of oriental pears can be increased greatly with proper storage. Pears go through an after-ripening process following their removal from the tree. Temperature and ventilation are important for proper after-ripening. After-ripening progresses most rapidly at 60° to 65° F. The fruit becomes uniformly soft and flavor and texture improve.

It is common practice to after-ripen pears in the home. The fruit is cleaned with a slightly damp cloth, individually wrapped in newspaper and placed in a basket or ventilated box in a cool place. After 2 weeks check the fruit for quality.

Figure 9. Fire blight is the most important consideration in selecting a pear variety for Texas.

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